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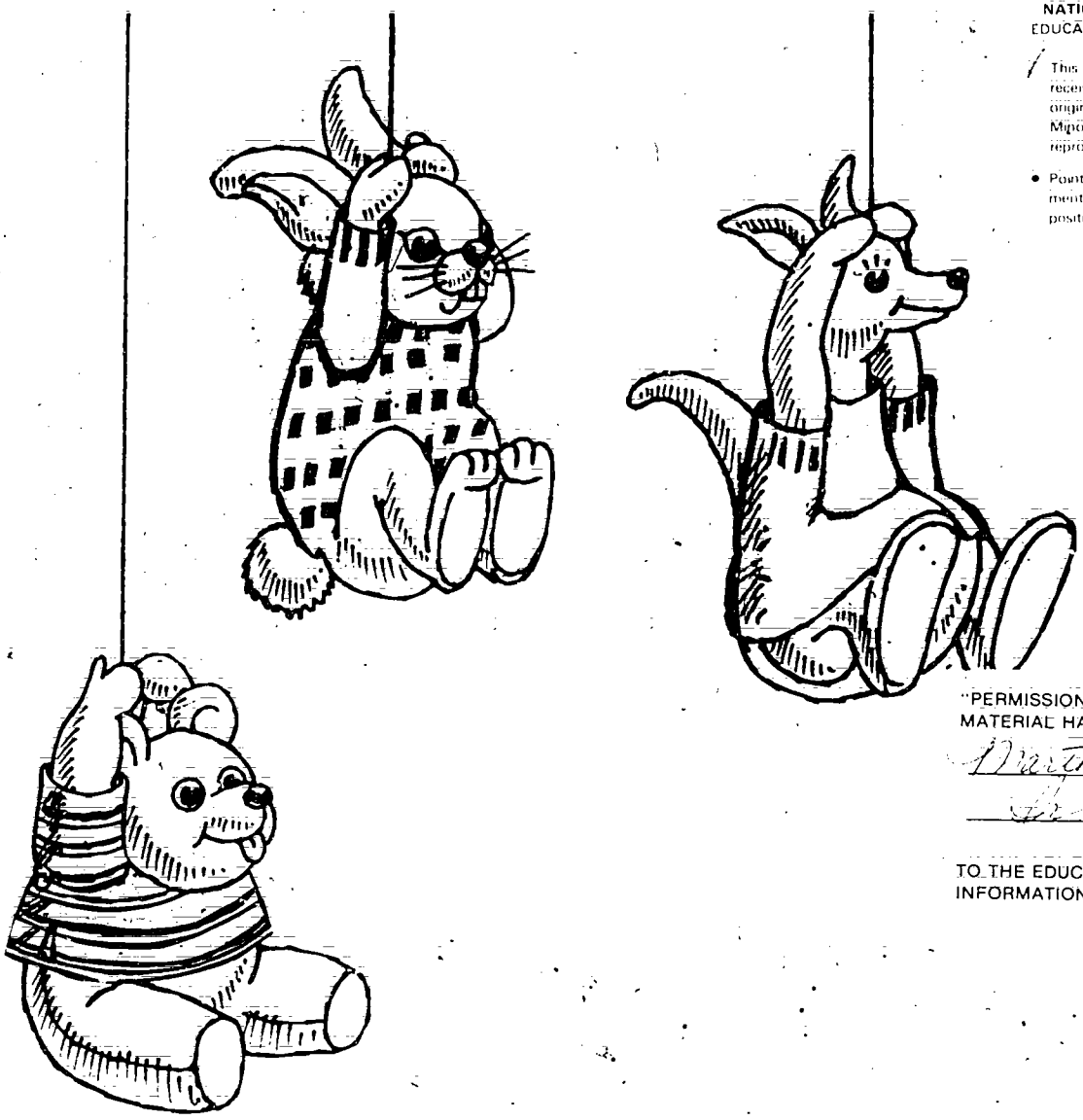
ABSTRACT

The third in a series of three booklets intended for parents of young handicapped children addresses cognition. The development of cognition is discussed and milestones charted from birth to age five. Learning processes are enumerated (using the senses, attending, exploring, adapting, imitating, and asking questions). Suggestions are given for parents to help their children develop cognitive skills through sensory experiences, building on past experiences, observing behavior, encouraging practice, and communicating with teachers and therapists. Ideas and activities are presented for making the home responsive and stimulating for infants, toddlers, and preschoolers. Examples of two young children are cited to illustrate ways in which parents can help their children develop cognitive skills. (CL)



HANDICAPPED CHILDREN BIRTH TO FIVE

COGNITION

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Parent Helper

Handicapped Children Birth to Five

COGNITION

Maryland State Department of Education
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1983

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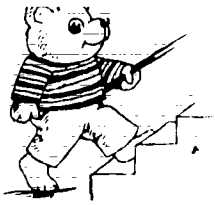
INTRODUCTION

Parents are prime teachers of their children in the early years of life. The Parent Helper. . .Cognition is one of a series of booklets about development written for parents. This booklet was designed to help you support your child's need to make "sense" of experiences.

This booklet will provide information on the sequential process of cognition, that process by which knowledge is acquired. It will suggest ways in which you can create learning opportunities within the home environment that guide cognitive growth.

Because each handicapped child presents a special challenge, this booklet can provide only broad and general guidelines. The handicapping condition may influence how fast, how much, and how well a particular child can process information. You, together with the educators and other professionals that know your child, can combine knowledge, creativity, and commitment to make the most of your child's potential.

GETTING FROM HERE TO THERE. . . THE DEVELOPMENT OF COGNITION



Cognition is a complex process that is associated with mental activities such as knowing, understanding, remembering, and making sense out of one's experiences and environment. Cognition begins at birth and continues in a recognizable pattern throughout childhood. During the early years of childhood, children acquire important mental tools necessary for learning and understanding their world. Cognitive growth does not occur in a vacuum; rarely are behaviors solely cognitive just as few behaviors are purely social or motor.

Sensory experience is the starting point of cognitive development. Seeing, hearing, touching, moving, smelling, and tasting allow the child to expand the understanding of his/her environment.

As the child begins to explore and seek new experiences, he/she begins to store information. This is the beginning of organized thinking and use of knowledge in various settings and ways. For example, a developmentally young child might make the discovery that certain size objects, like wooden blocks, are good to bang as compared to soft and pliable objects, like blankets, which are good to stroke. The child might show you that he/she has this notion about these two kinds of objects by the way the child's hand approaches and uses familiar and new objects. This use of information is important for the development of more complex thinking.

Memory plays an important role in the development of cognition. Without memory, the brain could not manage to compile, compare, and contrast information. Memory is necessary in order to relate past and present events and to make decisions.

The forming of concepts results from many personal experiences with people, places, things, and feelings. One way that children build concepts is by linking together objects or experiences that are similar. Infants begin at an early age to notice likenesses and differences. Later, children can be helped to notice specific attributes such as size, shape, color, use, weight, and textures and to use this information for grouping objects. As it is acquired, language helps children to organize, label, and group experiences using symbols.

Initially, children's concepts are general. For instance, a young child might lump all animals into the class of "Bow-wow." Later, as

the child learns to identify the different properties of animals, the concept becomes better defined and focused. The child might enjoy sorting animals according to color, shape, size, where they live, what they eat, and what noises they make, to name just a few! At the same time the child is discovering differences between animals, he/she is putting all of this information together to form a general class known as animals. This process takes time. As the child matures, his/her thinking process becomes more complex.

Young children tend to be explorers and testers. Children seem to learn most easily from situations that are slightly new to them but related to what they already know.

The following Developmental Milestones chart provides a sequence and an age range for cognitive skill development. Parents may find this information helpful in planning activities appropriate for the developmental level of their own child. Since each child is different, the rate at which each child progresses through these sequences varies greatly.

DEVELOPMENTAL MILESTONES

About 0-3 Months

COGNITION:
Responds to new sound with movement or with voice
Follows movement of hands with eyes
Looks at an object or person
Shows positive response to familiar sounds

About 3-6 Months

COGNITION:
Repeats action on objects
Recognizes mother
Looks at hand and object when grasping
Uses visually directed reaching
Secures partially hidden object
Imitates cooing sounds
Uses movement or sound to continue an interesting game

About 6-9 Months

COGNITION:
Imitates simple, familiar gestures (for example, shaking toy)
Responds to name
Uncovers toy that has been partially hidden
Tracks and locates object falling out of view

About 9-12 Months

COGNITION:
Plays simple games, (for example, pat-a-cake)
Acts on or with visible toys or objects
Moves to reach a desired object
Finds a completely hidden object
Looks at pictures in a book
Touches adult or object to cause action or movement

About 12-18 Months

COGNITION:
Places one round shape in a form board
Uses a tool such as a stick to obtain objects
Recognizes shapes in a puzzle board
Imitates unfamiliar sound patterns
Imitates unfamiliar gestures
Points to an object named or wanted
Imitates at least one facial gesture
Attempts to find causal mechanism to operate toy

About 18-24 Months

COGNITION:
Identifies parts of own body
Places three shapes correctly in a form board
Names five parts of the body
Attends to nursery rhymes
Points to pictures in a book upon request
Imitates sounds, words or body movements
Activates objects directly
Finds object from indirect visual cues

About 24-36 Months

COGNITION:
Matches familiar objects, sorts objects, in two categories
Enjoys short stories read from picture book, describes simple pictures
Understands one-to-one relationship of sets up to ten
Points to "one" and "many"
Exhibits a sense of ownership, (for example, "It's mine")
Recognizes self in mirror
Engages in domestic make-believe play
Places five shapes correctly in a form board

About 36-48 Months

COGNITION:
Matches two or three colors
Knows concepts big/little, fast/slow, long/short
Tells a simple story
Matches pictures of like objects
Counts up to three by rote
Completes a form board of five or more pieces
Discriminates size, weight and length

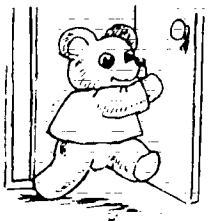
About 48-60 Months

COGNITION:
Knows own age
Knows day and night
Matches and names four primary colors
Counts 10 objects; answers how many on request
Sequences pictures in order of occurrence
Answers questions about a story being read
Names three objects from memory
Chooses own categories for sorting

About 60 + Months

COGNITION:
Matches sets of items to numerals, 1-10
Sequences up to five daily activities
Retells a brief story
Gives home address
Knows left from right

LEARNING...THE DISCOVERY PROCESS



How does your child learn?

- BY USING THE SENSES: Your child learns by listening to sounds made by people and things, by looking at shapes, colors, and patterns and by exploring with touch, taste, smell, and movement.

- BY PAYING ATTENTION: To learn, the child has to select important aspects on which to focus. Attention span—how long a child can concentrate—usually increases with maturity and is influenced by how interesting the experience is for the child.

- BY EXPLORING: Your child needs to handle all kinds of objects and to figure out how things work, where things fit, why things act in expected ways. Trial and error discoveries can lead to developing ways of generalizing about objects, events, and problems.

- BY ADAPTING: As your child encounters a new event, he/she relates it to other experiences. Earlier learning is slightly changed each time to fit new experiences. This is how your child's knowledge is broadened.

- BY IMITATING: As the child observes the actions of others and imitates those actions, he/she is acquiring new skills. Imitation is an effective form of learning that can spark new patterns of behavior.

- BY ASKING QUESTIONS: Even before your child can ask questions with words, he/she can signal need for more information through gestures or expressions which show interest in some aspect of the environment. Responses to questions can take many forms. However, helping the child figure out the answer and showing as well as telling seems to work best with young children.

LEARNING . . . THE DISCOVERY PROCESS

What can you do to help your child?

- CREATE AN ATMOSPHERE FOR LEARNING: Keep your child's developmental level in mind. Try to involve him/her in both routine and special family experiences. Raking leaves, cooking, going to the zoo, and attending a birthday party are examples of stimulating activities for the older child. Shaking a rattle and playing peek-a-boo are activities that can be used with the young baby.

- STIMULATE THE SENSES: The young child explores by looking, listening, feeling, tasting, smelling, and moving. In general, young children learn best from experiences that involve more than just a single sense. If your child has an opportunity to put all or many of his/her senses to work, the ability to learn and remember may be strengthened.

- BUILD NEW LEARNING BASED ON PAST EXPERIENCES: Children seem best prepared for success if the new skill presented is just slightly more advanced than what they can already do. Give your child a certain amount of freedom to choose activities independently and encourage attempts to go beyond that which is familiar and comfortable.

- POINT OUT DIFFERENCES AND SIMILARITIES: You can help your child group objects and experiences by showing how things are related to one another. Putting all the toy animals in a pile or picking out all the socks from the laundry basket are ways children can learn how objects are similar. As the child matures, you can teach sorting of forks and spoons, pots and lids, or hats and mittens.

- OBSERVE YOUR CHILD'S BEHAVIOR: Very young children show how they are processing information through their actions as well as by their spoken words. Play behaviors, hand gestures, facial expressions, and emotional reactions to events are clues to your child's understanding of the world. Noting these subtle measures of learning can help you select experiences that match present abilities and interests.

- ALLOW TIME FOR PRACTICE: Praise your child's success but also help him/her understand that making mistakes is a normal part of the learning process.

- TALK TO YOUR CHILD'S TEACHERS AND THERAPISTS: Parental and professional efforts can support each other if good lines of communication are built. Sharing ideas, problems, and solutions can benefit your child's learning at home and at school.

HOME. . . YOUR CHILD'S FIRST LEARNING ENVIRONMENT

Since your child's first learning environment is the home, you will want to make it a caring and stimulating place that is responsive to your child's needs and interests. The following ideas and activities are suggestions which may be helpful in creating a responsive learning environment. The suggestions are grouped for infants, toddlers, and preschoolers. Your child's developmental age rather than his/her chronological age should be your guide in choosing activities. Do not think that you should introduce all of the activities at one time in the sequence listed within each grouping. Personalize these suggestions in ways that make sense for your child and your family.

WHEN YOUR CHILD IS AN INFANT. . .

Provide opportunities to exercise the senses

- Construct a home-made mobile by securing a dowel across the crib. Tie two or three safe objects on it that look and feel very different. Renew your baby's interest in the toy by changing one of the objects every few days. Change your child's position and you provide new things to see and explore. Change the location of the crib or high chair. Try not to have your child awake and alone in the crib or playpen for long periods of time.
- Use your voice in different ways as you speak or sing to your child. Soft whispery tones, crisp bright sounds, loud boisterous noises all provide lessons in listening for your child.

- Provide your child with sensations that feel good to the skin. A gentle massage might be an especially relaxing bathtime activity and provide opportunities to talk about body parts and to label sensations with words: soft, smooth, wet, dry, warm, cool, fast, slow.

Jog memory through play

- Surprise your child by playing peek-a-boo. This traditional game helps a child to remember that you are still there even when he/she can't see you. Vary the game by sometimes covering your face and sometimes your child's face.
- Brush up on favorite nursery rhymes. Songs that couple the rhythm of repetitive words with a predictable action are especially fun for a young child. By playing the game many times the child remembers to look forward to a special word and to special actions because of the cues of the words and body movement.
- Invent games to help your child learn to imitate. Begin by modeling actions that are easy for him/her to perform, such as banging or shaking. Give lots of praise for any attempts and "shape" the action with your hands, helping if necessary.

Choose safe toys to attract attention and encourage play

- Provide toys that are attractive, versatile, easy to pick up and hold, and strong enough to endure rough handling. Infants seem to prefer bright colored toys or those having bold patterns. As baby's hands become more active, toys of different textures and shapes that can be grasped should be introduced.

Introduce cause and effect

- Give the infant toys that make noise or move if they are mouthed, kicked, prodded, or poked. Keep the game going by retrieving fallen materials, setting objects within reach.

  If your child's ability to grasp and hold is delayed or impaired due to handicapping conditions; occupational and physical therapists are excellent resources. They can show you techniques and materials to use with your child to encourage hand use and aid learning through manipulating toys and objects.

WHEN YOUR CHILD IS A TODDLER. . .

Make teaching a part of the daily routine

- Use opportunities in the daily routine as learning experiences. For example, while shopping at the grocery store, let your child touch each item of frozen foods as you put it in the basket. Comment in simple terms, "Cold peas." "Cold carrots." "Cold ice cream."

Be alert to fatigue and frustration

- Stay with a learning activity only as long as your child remains interested. If you see signs of frustration or fatigue, bring the game to a close. So that your child will want to play again soon, try to end on a note of success. Talk about how well things were done.

Build order into the environment

- Organize your child's important possessions by setting up clearly defined areas for storage. For example, a large basket might be fine for dress-up clothes; a low shelf would do for storing large blocks, and a cradle could be the best place for dolls and stuffed animals.

Match up mates

- Give your child the opportunity to match items into pairs, such as shoes, socks, and large buttons. Recognizing sameness contributes towards grouping and classification skills. Young children need many experiences with concrete objects before the abstract idea of "things that are just alike" is grasped. Later, after your child has grasped the idea of same, introduce the concept of "not the same" or different. Contrast objects that are not the same because of obvious differences. For example, contrast a large mixing spoon with a teaspoon. Talk about the big one and the little one. Color differences can be illustrated in the same way.

Feed in language

- Keep a flow of conversation going as you play with your child. You can supply words that turn concrete experiences into language symbols. Toddlers, and older children as well, often use gestures to describe their ideas. This nonverbal means of communication can strengthen concepts and may be accepted as a complement to verbal language. When you are with your child, say and show the obvious. For instance, say, "All gone" when the child's plate is empty.

  If your child has a communication disability, you will want to get special assistance from professionals. Talk to a speech-language pathologist about methods of communication that are best for your child's present needs.

Model actions to imitate

- Challenge your toddler with increasingly difficult movements to imitate. Some ideas for playing the "You do it game" are: use a mirror to practice lots of facial movement—blinking eyes, touching chin with finger, making happy and sad faces; introduce simple songs and finger plays with actions—"Itsy Bitsy Spider," "Where Is Thumbkin."

Provide opportunities to see how things work

- Allow your child to manipulate household objects to discover ways to make them work. With you close at hand, help your child turn light switches on and off, flush the toilet, mix eggs in a bowl, water the flowers with the garden hose, fit the key into the lock.

Investigate special relationships

- Encourage movement which has some result. By helping children learn ways to move, they begin to know about their bodies, what they can do. Have the child pull a cloth to uncover a favorite toy, push a button to ring a bell, use a stick or rake to get a toy that is out of reach.
- Let your child push chairs, large cardboard boxes, wagons, and a stroller to learn about size, shape, weight, and moving objects around obstacles. Encourage the use of grocery cartons for crawling into, peering over, knocking down, and filling and emptying. Let your child fill oatmeal boxes with wooden beads and dump them out again.

Because developmental areas do overlap, a delay or impairment in development of large or fine motor skills may influence the rate and the means in which your child learns other developmental skills. You and the professionals who work with your child's disability can plan for cognitive learning experiences, especially for the child who is not yet able to manipulate toys and objects independently or to move freely about the home.

WHEN YOUR CHILD IS A PRESCHOOLER. . .

Help him/her to find out what belongs together

- Classify real objects when your child is learning a new attribute, such as color, size, shape, and function. Later, pictures can be substituted in classifying activities.
- Try to build a physical component into classifying exercises. Encourage handling the objects used. Structure the exercise for success by starting with very basic categories.

- Work together making choices, until your child is beginning to grasp the correct pattern. Try not to let your child make lots of mistakes. A container that holds each group can remind the child of the attribute to be identified. For example, have red and blue blocks sorted into red and blue bowls.

Here are just a few classifying games to get you started. As you play with your child, try to use objects that are especially interesting to him/her.

- Color: Sort blocks, socks, and dishes by color.
- Size: Put big and little cans into big and little bags.
- Function: Place things that go (cars, trucks, wagons) into a "garage" and things that make music (bells, drums, shakers) into a music toy box.
- Location: Point out refrigerated food and pantry food.
- Function: Talk about things to eat and things to play with.

Do talk to your child's teacher and speech-language pathologist concerning the classifying activities that your child may be performing in school. Make sure that everyone is using similar terms and techniques to encourage this fundamental thinking tool.

Work on problem-solving

- Play "What If?" to give practice in finding practical solutions. Ask questions such as:
  "What if your soup was too hot to eat?"
  "What if you spilled paint all over the floor?"
  "What if drivers didn't stop for red lights?"
  "What if you couldn't find me in the store?"
- Give your child form boards and puzzles to put together. Working to make pieces fit gives practice in recognizing the relationships of parts to whole and of size, shape, position, and directionality.

If your child has fine motor difficulties (such as difficulties using fingers to grasp small objects), talk to his or her teacher and occupational therapist about adaptations that can be made for puzzles and other learning materials.

Read together

- READ TO YOUR CHILD! While most preschool aged children are not developmentally ready to learn to read, reading to your child can foster a positive attitude toward reading and provide both of you with a relaxing and productive time.
- Let your child's interest guide your selection of books.
- Good illustrations are essential to attract and hold interest.
- Stories can be simplified to match your child's language understanding level.
- Favorite books can be enjoyed over and over.

Exercise memory skills

- Plan for practice and repetition. Give lots of opportunity for following directions. Start with one-step directions; build towards two- and three-step directions. Have your child repeat the directions back to you.
- Help your child build associations between new information and old "knowledge." Point out links, showing how things are similar. Compare differences as well. Increasing skills in grouping and classifying make memory processes more efficient.
- Set up food or toy "stores" with household items. Send your child to the "store" with a "list" of things to be purchased. Have your child repeat the list after you to aid recall.

Experiment with nature and science

- Use simple experiments to teach youngsters to predict what will happen based on experience. You are your child's first guide through the natural world. Provide ideas, tools, and a degree of freedom. Sometimes your child might want to discover independently. Try not to interfere and "over-direct." At other times, your child might need you playing along side to keep the activity fun and productive.

- Test an assortment of objects in the bathtub to see what floats and what sinks. Go slowly, letting your child handle each one in the water. After experimenting with some, encourage predicting what will sink or float *before* it is tried out in the water.
- Have your child place a pan of water (an inch or so) outside on a cold night. Check it the next morning to see its change. Compare it to ice from the freezer. Watch the action as the pan is placed on a warm radiator.
- Test water's effects on a variety of materials. What happens to a dry sponge, a drop of food coloring, and a squirt of liquid soap when you put them in the water.
- Use a magnifying glass to reveal a new world to your child. Help your child pay attention to what is seen by asking questions about it. "Is the ant moving? Does it have legs? Where do you think it is going?"
- Find out what is inside natural and manufactured things. Your child needs to know the many parts that make up a whole.
- Take walks in a variety of places, such as in the park, in the woods, or by a stream. Point out birds, flowers, or trees. Encourage the child to feel, smell, and touch when appropriate.
- Some edible take-aparts: fruits, vegetables, nuts. Some mechanical ones: Telephone, broken doll, flashlight, ball point pen.
- Make discoveries in the kitchen and eat the delicious results. Help your child transform cream into butter. Bake bread. Roll out biscuit dough into special shapes. Match each shape with its hole. Use unflavored gelatin and fruit juice to make gelatin cubes.
- Raise plants and vegetables, indoors and out. Experiment with seeds and small plants such as cherry tomatoes, squash, or peppers. Let watering be a special responsibility for your child.

Explore materials that show number and amount

- Help to promote basic concepts of number and amount that lead to later learning in mathematics. As a part of the normal routine, use amount words to describe objects. "You have *all* of the blocks and Jamie doesn't have *any*. Please give her *some*". Show by modeling and by gesture what you mean by these terms. Practice often and use lots of different examples. Experiment with amounts during sandbox play. Illustrate amount words such as more, less, none, several, a few. Make three mountains to point out big, bigger, biggest. Make roads long, longer, longest. Make sand cakes small, smaller, and smallest. Play ordinary games with real things. Make rows of shoes, smallest to largest. Line up the family, shortest to tallest.
- If your child does seem interested in counting, channel this interest by giving him/her real objects to count, such as shoes, beans, and pencils. Have your child touch each object as it is counted. Provide jobs to do that involve counting saying, "Give one piece to each friend," or "Count how many cookies are left in the bag." Your child's teacher may be using many techniques and materials to prepare your child for learning number and amount relationships and may have some good suggestions for home activities.

Take discovery trips

- **Some Points for Adventure:**
  The Firehouse
  Parent's Workplace
  A Dairy Farm
  The Library
  Sporting Events
  A Pet Shop
  Bus, Train, or Subway Trips
  A Car Wash
  Movies
  The Post Office
  Construction Sites
  Police Station
  The Zoo
  Art, Science, and Children's Museums
  School Fairs and Carnivals

- Venture on journeys into the neighborhood and beyond. Prepare your child for what might be seen. Introduce new vocabulary words. Review "best" manners and special ways of behaving during your visit.
- Whenever possible, relate what your child sees to what your child already knows. Compare and contrast new experiences with old.
- Follow up your visit with play that helps your child remember and understand the experience. For example, be make-believe fire fighters after touring the firehouse. Use toy fire trucks, hats, raincoats, and boots. Point out details in your play equipment to see how it compares to the real object and event.
- Ask and answer lots of questions, such as, "Why do firefighters wear raincoats?" In simple terms, talk about fire safety rules. During your next visit to the library, check out one or two books on the subject for reading time.

SAMPLE EXERCISES

You have probably discovered that your child needs some specific time with you for a certain activity each day. However, there are also many opportunities that occur naturally in the daily routine which can promote cognitive development. The following activities serve as reminders that thinking skills form a foundation for many kinds of developmental learning.

DESCRIPTION

Megan, who will soon be five, is quite like other preschoolers in her neighborhood. She has several "best" friends from her block and from her special school. She relishes make-believe play, collects dolls and dinosaurs, and wears leotard and tights to gymnastics on Saturday mornings. Megan does differ from her peers in the rate that she learns. Because she has Down's Syndrome, she is developing much more slowly than the average child. She began to speak in short phrases when she was three and a half. Large and small motor skills emerged slowly as well. Megan now can understand and say a large number of words. Usually she speaks in whole sentences. She handles most large motor tasks adequately at the four-year-old level and her fine motor skills have improved markedly since her parents and teacher noticed that she seemed to be far-sighted. Glasses have corrected her vision and she now enjoys participating in activities that require eye-hand coordination.

SAMPLE TEACHING ACTIVITY

The BIG EVENT in Megan's household is her upcoming birthday party. Megan's parents want to turn party preparations into hands-on learning experiences for their enthusiastic little girl. Carefully they decide ways that the before-party activities can strengthen important concepts and provide practice for thinking skills.

To help Megan understand how much time was left before her birthday, her mother drew a large calendar. Together, they talked about what had to be done to get ready for the party. Her mother drew simple pictures, representing tasks to be accomplished over a week's time.

On Sunday, they will write and address party invitations. Megan's special job is to *match the name* on the invitation *with the name* on the envelope.

On Monday, they will make party hats by folding and stapling construction paper into cone hat *shapes*.

On Tuesday, they will shop for party favors, making sure that they have the *correct number*—one for each of the five guests and one for Megan's little brother. Megan's special job is to *count* the chosen favors.

On Wednesday, they will make paper chains to string from the ceiling. Megan's father makes the first one and challenges Megan to make one exactly like his—just as *long* and using the same *pattern* of *colors*. They compare the two chains to make sure that they both are the *same*. Next, Megan is set to work to make two *short* chains using a *different* pattern of colors.

On Thursday, Megan, her three-year-old brother and her mother will act out her birthday party, *pretending* that guests have arrived. Her mother will help her *practice* and *remember* how to make her friends enjoy her party. They will select several games to play in a group and go over the *rules* and the *techniques*.

On Friday, they will bake the cake and make the icing. Megan's special tasks are *following directions*, *measuring* dry and liquid ingredients *accurately* and stirring carefully.

On Saturday morning, they will set the table and hang paper chains and balloons. Megan's special assignment is placing one party favor, one hat, one plate, one cup, one fork and spoon, and one napkin for each of the children at the table. *Five* friends plus *one* brother plus *one* birthday girl equals seven.

For Megan, each phase of the party preparations will be a fun opportunity to practice important cognitive skills which explore number, size, shape, color, or time.

DESCRIPTION

Six-month-old Crystal was born 10 weeks prematurely. She spent the first two months of life in an incubator. Since Crystal's parents lived approximately four hours drive from the hospital, her parents were able to visit her only once a week. Recently, it was discovered that Crystal has a hearing impairment. According to Crystal's parents, she is fussy and cries frequently "for no apparent reason." She seldom recognizes her mother or father or looks toward sounds.

TEACHING EXERCISE

Crystal's parents, working with her pediatrician and the staff of the parent/infant program, realize that she needs a great deal of consistent, loving care. She must be given opportunities to develop a sense of trust and to explore her environment.

Crystal's parents have agreed to set up a routine to respond to her daily needs. Her parents take turns responding to her crying and fussy behavior using consistent care.

Crystal's father plays with her frequently. He makes a funny face and when Crystal watches him with interest or smiles, he repeats the face. Dad had discovered that by repeating Crystal's cooing sounds at a greater volume or closer to her, he can get her to repeat them. He continues the game by repeating her sounds or by adding a new one.

Together with the teaching staff, Crystal's parents are beginning to introduce activities that require Crystal to play with toys which produce sounds. Crystal is learning that by swiping the mobile or shaking the rattle, she can create sounds. Crystal's father places a brightly colored object in her hand so she could see it. Crystal then explores the object, first putting it into her mouth and then shaking it.

Crystal enjoys the chance to hold, shake, and mouth a variety of objects. Mom shares the toys with Crystal, allowing her to explore them in a playful way and then to retrieve them. To change the game, Mom has Crystal reach for the toy from different directions, with one hand and then the other. Mom changes the toy to keep Crystal's interest in the game.

Both of Crystal's parents recognize the changes in her response to them and to her environment. They are feeling more comfortable with identifying her needs.

SUMMARY

Many suggestions in this guide have come from parents of handicapped children; others have been successfully used by teachers and other school personnel. It is hoped that the suggested activities will assist you in creating a secure, loving environment which will encourage your child's cognitive growth.

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